Quick Start for Hardware Installation

Avaya P333T-PWR Stackable Switch

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- 21 CFR 1040.10 and CFR 1040.11.

The LASER devices used in Avaya equipment typically operate within the following parameters:

Typical Center Wavelength	Maximum Output Power
830 nm - 860 nm	-1.5 dBm
1270 nm - 1360 nm	-3.0 dBm
1540 nm - 1570 nm	5.0 dBm

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- Electrical Fast Transient IEC 61000-4-4
- Lightning Effects IEC 61000-4-5
- Conducted Immunity IEC 61000-4-6
- Mains Frequency Magnetic Field IEC 61000-4-8
- Voltage Dips and Variations IEC 61000-4-11

Power Line Emissions, IEC 61000-3-2: Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions.

Power Line Emissions, IEC 61000-3-3: Electromagnetic compatibility (EMC) – Part 3-3: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems.

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Haverhill, MA 01835 USA
Attention: Avaya Account Management

E-mail: totalware@gwsmail.com

For the most current versions of documentation, go to the Avaya support Web site: http://support.avaya.com.

Chapter 1: Before you Start

Before you install your Avaya Switch, prepare all the information, resources, and tools that you need during the installation process. Good preparation ensures a smooth installation with the least amount of interruption.

WARNING:
ONLY TRAINED AND QUALIFIED PERSONNEL SHOULD BE ALLOWED TO INSTALL OR REPLACE THIS EQUIPMENT.

WARNING:
EQUIPMENT MUST BE CONNECTED TO AN EARTHED MAINS SOCKET-OUTLET.

Gathering Information

Defining the Installation

The P333R can be installed in several different configurations. Before you start the installation, find out what configuration is needed for your site.

Preparing Contacts you might need

Ensure that you have the names and phone numbers of any people you might need to contact at the installation site. This list might include the people responsible for:

- Network architecture
- System administration
- Site security
- Site deliveries

Preparing Installation Files

Ensure that you load the latest versions of the firmware file for the P333R. You can download the firmware file needed for your installation from the Avaya Support Web site, at http://support.avaya.com.

Preparing Needed Tools

Prepare the tools you need to mount the P333T-PWR according to the Table 1:

Table 1: Mounting Tools

If you need to mount on...	Prepare these tools
Rack	Phillips head screwdriver

Choosing the Installation Site

Ensure that the location where you install your P333T-PWR fulfills the following requirements:

- Cables are away from sources of electrical noise such as:
  - radio transmitters
  - broadcast amplifiers
  - power lines
  - fluorescent light fixtures
- Water or moisture cannot enter the chassis.
- Air can flow freely around all sides of the chassis.
- The vents on the sides of the chassis are not blocked.

- The environmental conditions match the requirements listed in Table 2.

Table 2: Environmental Requirements

Condition	Acceptable values
Ambient temperature	23^{o} to 122^{o}F (-5^{o} to 50^{o}C)
Relative humidity	5-95% non-condensing
Weight support	

- The power source matches the specifications shown in Table 3:

Table 3: Power Requirements

Power consumption	150 W
AC Input voltage	100 to 240 VAC, 50 to 60 Hz
AC Input current	A
DC Input voltage	-36 to -72 VDC
DC Input current	A max

See the *Avaya P333T-PWR User's Guide* for additional information on environmental requirements.

Building a stack

Follow the guidelines in this section in order to build a working stack using any combination of the following devices:

- P330 series
- P330-ML series
- G700
- P330 series

1. Add only a single box at a time to an existing stack.

   Important:
   The stack master (also called "stack IP Agent") may fail to preserve existing "stack configuration" if you will add more than a single device to an existing stack at a time.

   – After adding the first box, wait until the stack is functioning fully before adding the next device.

2. Refer to Table 4 to see which firmware versions can be used in mixed stacks.
   For example, if you wish to add a P332G-ML to a stack with P330 4.5 switches, the P332G-ML switch must have firmware version 4.5.8.

   – Upgrade/downgrade the firmware of switches that do not match version in the table.

   Tip:
   It is highly recommended to upgrade/downgrade before connecting the added box to an existing stack.

   – Ensure switches of the same type have the same firmware version

Table 4: Firmware Versions Matrix

	Required version						
	Stack without C360					**Stack with C360**	
Switch	**3.11**	**3.12**	**4.0**	**4.1**	**4.5**	**4.3**	**4.5**
P333T	3.11.0	3.12.1	4.0.17	4.1.6	4.1.6	N/A	N/A
P334T	3.11.0	3.12.1	4.0.17	4.1.6	4.1.6	N/A	N/A
P333R	3.11.0	3.12.0	4.0.9	4.1.5	4.1.5	N/A	N/A
P333R-LB	3.11.0	3.12.3	4.0.6	4.1.5	4.1.5	N/A	N/A
P332MF	3.11.0	3.12.1	4.0.17	4.1.6	4.1.6	N/A	N/A
P333T-PWR	3.11.0	3.12.1	4.0.17	4.1.6	4.1.6	N/A	4.1.6
G700	3.11.0	3.12.1	4.0.17	4.1.6	4.1.6	N/A	4.1.6
P334T-ML	3.11.16	3.11.16	4.0.15	4.1.3	4.5.8	N/A	N/A
P332G-ML	3.11.15	3.11.15	4.0.15	4.1.3	4.5.8	N/A	4.5.8
P332GT-ML	3.11.15	3.11.15	4.0.15	4.1.3	4.5.8	N/A	4.5.8
C363T	N/A	N/A	N/A	N/A	N/A	4.3.12	4.5.14
C364T	N/A	N/A	N/A	N/A	N/A	4.3.12	4.5.14
C363T-PWR	N/A	N/A	N/A	N/A	N/A	4.3.12	4.5.14
C364T-PWR	N/A	N/A	N/A	N/A	N/A	4.3.12	4.5.14

Note:
Position the C360 switches either at the top or bottom of the stack to ensure mechanical stability.

Stack Master election rules

Table 5 lists the switches in order of election priority from highest to lowest.

Note:
If there are two switches with the same firmware version and the same election priority, the switch positioned lower in the stack becomes Stack Master.

Table 5: Stack Master election priority

Switch type	Switch mode	Stack Master election priority
C363T, C363T-PWR	Layer 2	1
C364T, C364T-PWR	Layer 2	2
C363T, C363T-PWR	Layer 3	3
C364T, C364T-PWR	Layer 3	4
P332GT-ML	Layer 2	5
P332G-ML	Layer 2	6
P334T-ML	Layer 2	7
P332GT-ML	Layer 3	8
P332G-ML	Layer 3	9
P334T-ML	Layer 3	10
G700	N/A	11
P333R, P333R-LB	Layer 2	12
P333T, P334T, P332MF	N/A	12
P333T-PWR	N/A	13
P333R, P333R-LB	Layer 3	14
P333R-LB	Webswitch	15

Figure 1: Example stack elections

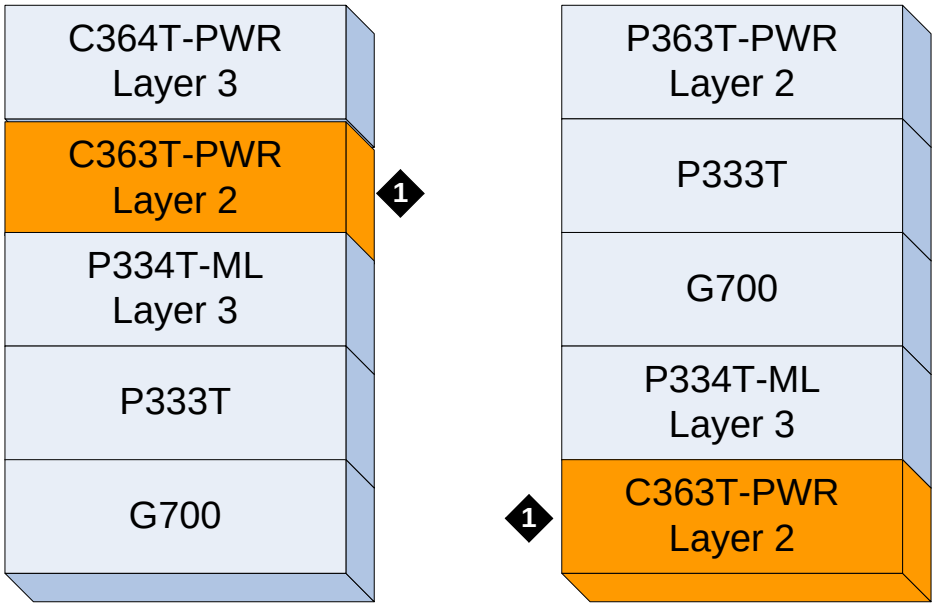


Figure notes:

1. Stack Master

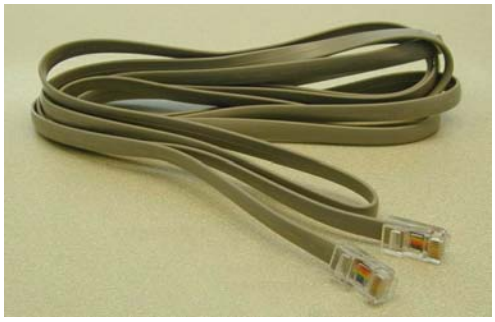
Chapter 2: Unpack the Device

ELECTROSTATIC ALERT:
Wear an anti-static wrist ground strap whenever you handle components of a P333T-PWR Connect the strap to an approved ground, such as an unpainted metal surface.

Equipment

Open the box that contains the P333T-PWR and ensure that it contains the following components and accessories:

- One Avaya P333T-PWR Switch.
- One Accessory Kit that contains:

One 115V 3 Wire Power Cable	
One RJ45 to RJ45 Flat Cable	

One RJ45 to DB9F Adapter	
One DB25M Adapter	
Four (4) 5/16" Round Head Screws	
Four (4) Washers	
Four (4) stand-off feet	

Documentation

- Avaya P333T-PWR Quick Start Guide (this document)
- Avaya P333T-PWR Release Notes

- Avaya P330 Documentation and Utilities CD (see detail below)
- Avaya Communication Warranty and License Agreement

Avaya P330 Documentation and Utilities CD

The CD contains the latest User's Guides for the Avaya P330 stackable switches and files for use with the Embedded Web Manager.

- User's Guides

  You can view and print these Guides using Adobe® Acrobat® Reader.

- Auxiliary Files for use with the Embedded Web Manager

  Please refer to the documentation for information on how to use these files.

  - Java plug-in
  - Help files

- Adobe Acrobat Reader

  This application allows you to view and print the User's Guides on this CD.

Chapter 3: Mount the Device

You can mount the P333T-PWR in a rack.

The P333T-PWR chassis fits in most standard 19-inch racks. It is 2U (3.5”, 88 mm) high.

Before you Install the P333T-PWR in a Rack

- Disconnect all cables from the unit before proceeding with the rack installation.
- When installing the P333T-PWR in a rack, ensure that the equipment is positioned such that it will not cause the rack to become unstable or tip over.
- Ensure that the combination of equipment in the rack will not cause an overload or overcurrent condition on the power strip being used and/or the customer's branch circuit.
- The P333T-PWR units weigh a maximum of 15 pounds (6.8 kg). Be careful when installing or removing the P333T-PWR product from the rack.
- If a power strip is being used in the rack, ensure that it has a reliable earth connection. If the P333T-PWR equipment will be plugged directly into a wall outlet, ensure that there is a reliable ground connection at the outlet.
- Ensure that the internal rack ambient temperature is within the operating specification limits of the P333T-PWR.
- Ventilation for the P333T-PWR is from side to side. Ensure that there is adequate space on each side of the P333T-PWR equipment when installed in the rack to allow sufficient airflow.

Place the P333T-PWR in the rack as follows:

1. Snap open the hinged ends of the unit’s front panel to reveal the screw holes. Refer to Figure 2 and Figure 3.

Figure 2: Closed hinged end

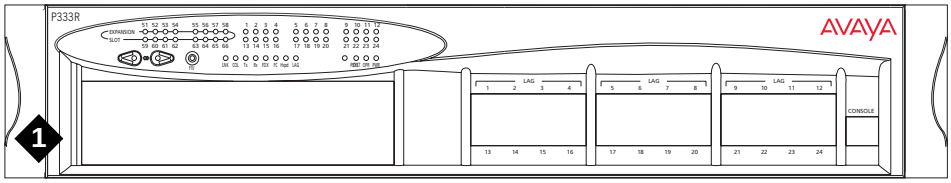


Figure notes:

1. Closed hinged end

Figure 3: Open hinged end

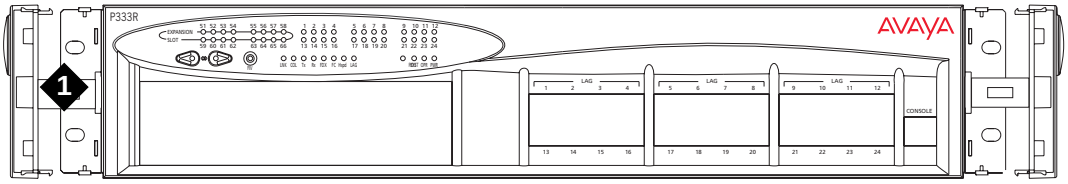


Figure notes:

1. Open hinged end

2. Position the unit in the rack.
3. Secure the unit to the rack, taking care not to overtighten the screws.
4. Snap closed the hinged ends of the front panel.

Tip:

You can now safely connect the cables to the unit.

Chapter 4: Power Up

Connecting the P333T-PWR to the main electrical supply provides power to the switch.

VOLTAGE ALERT:
To isolate the switch completely, you must disconnect all power connections: AC plug or DC terminal block and DC BUPS power.

AC input

1. Insert the power cord into the power connector (BUPS or Power Supply) on the rear of the unit.

Figure 4: P333T-PWR rear panel

Figure notes:
1. BUPS connector
2. AC connector

2. Insert the other end of the power cord into the electricity supply or the BUPS connector.
   – The unit powers up and performs a self test procedure. The LEDs flash at regular intervals after the self-test procedure is completed successfully.

DC input (optional)

VOLTAGE ALERT:
Before performing any of the following procedures, ensure that DC power is OFF.

Figure 5: P333R DC version rear panel

Figure notes:
1. DC input terminal block

The P333T-PWR an operate on the AC input only. However, you may wish to use the optional DC input for the following:

- Backup for the Power over Ethernet ports
- To provide more than 200W for the Power over Ethernet ports

Please refer to the P333T-PWR User's Guide for more information.

Chapter 5: Prepare for Configuration

This chapter provides information on preparing the P333R for configuration, and discusses the following topics:

- Establishing a Console Connection
- Assigning a Stack IP Address
- Establishing a Telnet Connection
- Configuring the Switch

Establishing a Console Connection

This section describes the procedure for establishing switch access between a terminal and the Avaya P333T-PWR switch over the serial port provided on the front panel of the P333T-PWR (RJ-45 connector labeled “Console”). For information on the console port pin assignments, refer to the *Avaya P333T-PWR User Guide*.

Figure 6: Avaya P333T-PWR Console Port

Figure notes:

1. Console port

1. Use the serial cable supplied to attach the RJ-45 console connector to the Console port of the active switch. Connect the DB-9 connector to the serial (COM) port on your PC/ terminal.
   - The master switch is indicated by the SYS LED being ON.
2. Ensure that the serial port settings on the terminal are:

- 9600 baud
- 8 bits
- 1 stop bit
- no parity.

– If you reset or powered up the switch after connecting and configuring the terminal, `Welcome to P333T-PWR` appears followed by the Login Name prompt.

– If the login prompt does not appear, press a key on the terminal.

3. Enter the default login: `root`.
   – The Password prompt appears
4. Enter the user level password: `root`.
   – You can now establish a connection to the Router or the Master switch (indicated when the SYS front panel LED is ON) using the Session commands and begin the configuration of module, stack, or router parameters.

Assigning a Stack IP Address

Note:
All P333T-PWR switches are shipped with the same default IP address. You must change the IP address of the master switch in a stack in order to guarantee that the stack has its own unique IP address in the network.

The network management station or a workstation running a Telnet client can establish communications with the stack once this address had been assigned and the stack has been inserted into the network. Use the CLI to assign the stack an IP address and net mask.

To assign an IP stack address:

1. Establish a serial connection by connecting a terminal to the master switch of the stack.
2. When prompted for a Login Name, enter the default name **`root`**
3. When you are prompted for a password, enter the password **`root`**. You are now in Supervisor Level.
4. At the prompt, type:
   `set interface inband` ***`<vlan> <ip_address> <netmask>`***
   Replace ***`<vlan>`***, ***`<ip_address>`*** and ***`<netmask>`*** with the VLAN, IP address, and net mask of the stack.
5. Press Enter to save the IP address and net mask.
6. At the prompt, type **`reset`**. Type y and press Enter to reset the stack. After the Reset, log in again as described above.

– At the prompt, type **`set ip route <dest> <gateway>`** and replace ***`<dest>`*** and ***`<gateway>`*** with the destination and gateway IP addresses.

Establishing a Telnet Connection

Perform the following steps to establish a Telnet connection to the P333T-PWR for configuration of Stack or Router parameters. You can Telnet the Stack Master IP address:

1. Connect your station to the network.
2. Verify that you can communicate with the Avaya P333T-PWR by pinging the IP of the Avaya P333T-PWR. If there is no response using ping, check the IP address and default gateway of both the Avaya P333T-PWR and the station.

   Tip:
   The Avaya P333T-PWR default IP address is 149.49.32.134 and the default subnet mask is 255.255.255.0.
3. From the Microsoft Windows taskbar of your PC click **Start** and then **Run** (or from the DOS prompt of your PC), then start the Telnet session by typing: **`telnet <P333R_IP_address>`**
   For example: **`telnet 149.49.32.134`**
4. If the IP Address in the Telnet command is the IP address of the stack, then connection is established with the Switch CLI entity of the Master module.
   - The “Welcome to P333T-PWR screen appears
5. Enter the default name **`root`** at the Login name prompt.
6. Enter the User Level password **`root`** in lower case letters (do *not* use uppercase letters) at the Password prompt.
   - The User level prompt will appear when you have established communications with the Avaya P333T-PWR
     You can now configure the stack and change its IP address.

Configuring the Switch

This section describes the procedures for the first-time configuration of the Avaya P333T-PWR The factory defaults are set out in detail in the tables included in this chapter.

You may configure the Avaya P333T-PWR using the text-based Command Line Interface (CLI), the built-in Device Manager or Avaya Integrated Management.

For instructions on the CLI, see the *Avaya P330 Reference Guide*.

For instructions on the use of the graphical user interfaces, refer to the *P330 Device Manager User Guide* on the *Avaya P330 Documentation and Utilities CD*.

Basic configuration

To connect a PC terminal or VT-100 terminal to the Avaya P333T-PWR

1. If you are using a PC, initiate a VT-100 terminal emulation session using an application such as Windows® HyperTerminal.
2. Press Enter.
3. Type the User name **`root`** when prompted and press Enter.
4. Type the default password **`root`** when prompted and press Enter.
   - The P333R-N(super)# prompt appears

     N is the number of the switch in the stack.

Assigning the Stack IP Address

Tip:
Commands are shown as follows: **`set interface inband`**;
parameters which you need to enter are shown in **`<>`** as follows: **`<vlan>`**

1. Type **`set interface inband <vlan> <ip_address> <netmask>`**, replacing **`<vlan>`**, **`<ip_address>`** and **`<netmask>`** with the VLAN, IP address and net mask of the stack and press Enter.
2. At the `P333T-PWR(super)#` prompt, type **`reset`** and press Enter to reset the stack.
3. After the reset, perform login again as described above.
   - The `P333T-PWR(super)#` prompt appears.
4. Type **`set ip route <destination> <gateway>`**, replacing **`<destination>`** and **`<gateway>`** with the destination and gateway IP addresses.
5. Press Enter to save the destination and gateway IP addresses.

Avaya P333R Default Settings

If you wish to change the default parameters shown and configure the mandatory parameters, we recommend that you use the Command Line Interface (CLI).

For further information, please refer to Chapter 6 of the Avaya P333T-PWR User's Guide.

The default settings for the Avaya P333T-PWR switch and its ports are determined by the Avaya P333T-PWR firmware. These default settings are subject to change in newer versions of the Avaya P333T-PWR firmware. See the *P330 Release Notes* for the most up-to-date settings.

Table 6: Default Switch Settings

Function	**Default Setting**
IP address	149.49.32.134
BootP mode	Never
Subnet Mask	255.255.255.0
Default gateway	0.0.0.0
Management PC SLIP IP Address	192.168.10.2
Management VLAN ID	1
Spanning tree	Enabled
TFTP Mode	Limited
TFTP Server	0.0.0.0
TFTP File Name	viisa
SNMPv1 communities: Read-only Read-write Trap SNMP	 Public Public Public
SNMP authentication trap	Disabled
CLI timeout	15 Minutes
User Name/Password	root/root

Table 7: Default Port Settings

Parameter	Default Setting
Port speed and duplex mode	• 10/100-TX ports: Auto-negotiation • 100Base-FXports:100 Mbps full duplex • 1000Base-X ports: 1000 Mbps full duplex
Flow Control	• 10/100 and 100 Mbps: Disabled • 1000 Mbps: Disabled (no pause)
Backpressure	• 10/100: Enabled (when in half duplex mode) • 100Base-FX &1000 Mbps: Not applicable
Auto-negotiation	• 10/100-TX ports: Enabled • 100Base-FX ports: Not applicable • 1000Base-X ports: Enabled
Administration State	Enabled
Port VLAN ID	1
Tagging mode	Clear
Port priority	Regular
Inline power	Enabled
Inline power priority	Low

Tip:
Functions operate in their default settings unless configured otherwise.

Chapter 6: Device Manager

This chapter describes the installation procedures for the Device Manager.

Overview

The Device Manager provides the following:

- Managing and monitoring Power over Ethernet.
- Device Configuration - Viewing and modifying the different device configurations.
- Virtual LANs - Viewing and editing Virtual LAN information.
- Link Aggregation Groups (LAGs) - Viewing and editing LAG information.
- Port Redundancy - Setting port redundancy for ports in a P333T-PWR Switch.
- Port Mirroring - Setting up port mirroring for ports in a P333T-PWR Switch.
- Trap Managers Configuration - Viewing and modifying the Trap Managers Table.
- Switch Connected Addresses - View devices connected to selected ports.
- Port Security.
- Intermodule Redundancy
  - One pair per stack.
  - Also operates as a result of a module fault, for example, power failure.

System Requirements

Minimum hardware and operating system requirements are:

- Pentium II 400 Mhz-based computer with 128 Mb of RAM.
- Screen resolution of 1024 x 768 pixels.
- Microsoft Internet Explorer 5 or higher.
- Microsoft Windows 2000 Workstation or Windows XP.

- Sun Microsystems Java plug-in (supplied on the “Documentation and Utilities” CD). Refer to the Release Notes for the exact version of the Java plug-in.

Configuring the Device Manager

You can configure several Device Manager parameters using the CLI. These parameters include the time-out and retries parameters, the location of the Web server that provides the help files for the Device Manager, and the Java plug-in required for running the Device Manager.

Device Manager Commands

The following Device Manager commands are available.

In order to...	Use the following command...
Set the SNMP retries parameter	set snmp retries
Set the SNMP time-out parameter	set snmp time-out
Set the location of the Web server with the help files and the Java plug-in	set web aux-files-url
Display the SNMP retries parameter	show snmp retries
Display the SNMP time-out parameter	show snmp time-out
Display the URL of the Web server with the help files and the Java plug-in	show web aux-files-url

Running the Device Manager

Note:
You should assign an inband or out-of-band interface IP address to the switch before beginning this procedure.

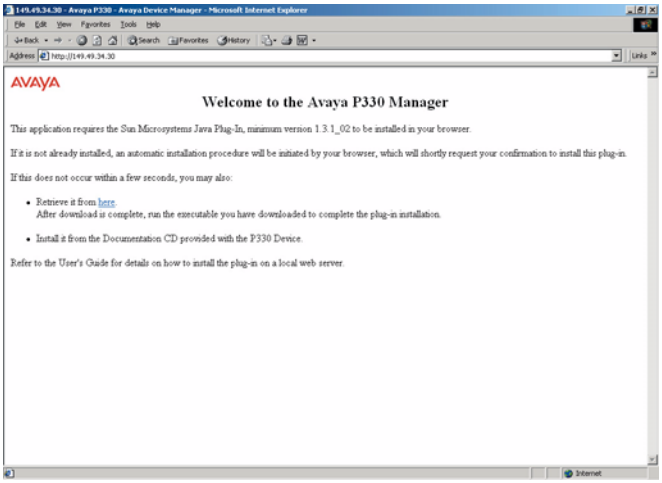
To run the Device Manager:

1. Open your browser.
2. Enter the URL of the switch in the format **`http://aaa.bbb.ccc.ddd`** where ***`aaa.bbb.ccc.ddd`*** is the inband or outband interface IP address of the switch.
   - The user name is “root”.
   - The default password for read-only access is “root”.
   - The default passwords for read-write access is “root”.

Note:
The P330 Device Manager passwords are the same as those of the CLI. If you change the passwords of the CLI then those passwords become active for the Device Manager as well. For further information on the passwords, refer to the *Avaya P330 Installation and Configuration User Guide*.

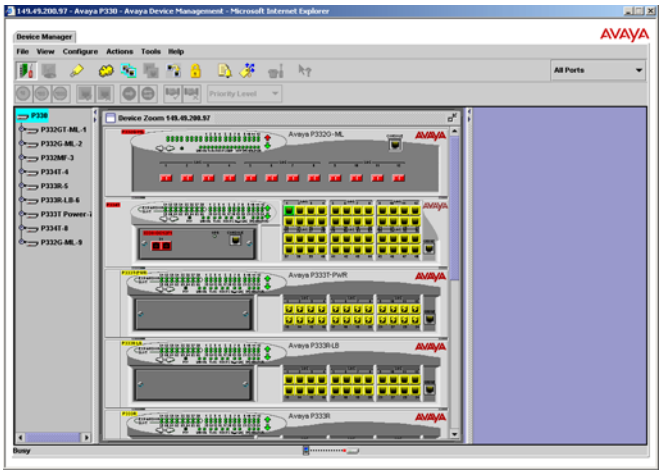
The welcome page is displayed.

Figure 7: The Welcome Page



If you have the Java plug-in installed, the Device Manager automatically opens in a new window, shown in Figure 8.

Figure 8: Device Manager



3. If you do **not** have the Java plug-in installed, follow the instructions on the Welcome page for a variety of options to install the plug-in (see Installing the Java Plug-in).

Installing the Java Plug-in

If the network manager has configured the system, the plug-in should be installed automatically.

Note:
Ensure that Java or JavaScript is enabled on your Web browser. Please refer to your browser on-line help or documentation for further information.

If the plug-in is not installed automatically, then you have three options for installing it manually:

- Installing from the P330 Documentation and Utilities CD
- Install from the Avaya Web Site
- Install from your Local Web Site

Installing from the P330 Documentation and Utilities CD

To install from the P330 Documentation and Utilities CD:

1. Close all unnecessary applications on your PC.
2. Insert the *Avaya P330 Documentation and Utilities* CD in the CD drive.
3. Open Windows Explorer.

4. Browse to the **embweb-aux-files** folder on the CD.
5. Double-click **plugin_a_b_c.exe** (a, b and c are the version numbers of the plug-in).
6. Follow the on-screen instructions.

Install from the Avaya Web Site

Click the link in the Welcome page labelled “Retrieve it from here”.

Install from your Local Web Site

Click the appropriate link in the Welcome page.

Note:
This option is only available if the network manager has placed the files on the local Web server.

Installing the On-Line Help and Java Plug-In on your Web Site

Tip:
This procedure is optional.

Copying the help files and Java plug-in to a local Web server allows users to access the on-line help for the Device Manager and enables automatic installation and maintenance of the Java plug-in the first time the user tries to manage the device.

1. Copy the `emweb-aux-files` directory from the “Avaya P330 Documentation and Utilities” CD to your local Web server. Refer to your Web server documentation for full instructions.
2. Define the URL in the P333T-PWR using the following CLI command:
   `set web aux-files-url` `//IP address/directory name`
   where `//IP address/directory name` is the location of the directory from the previous step.

Documentation

The Device Manager comes with a detailed User's Guide including a Glossary of Terms and an overview of Data Communications concepts.